

STATE OFFICE FILE COPY

**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**LA PORTE COUNTY
INDIANA**

FEBRUARY 1979



**U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MIDWEST TECHNICAL SERVICE CENTER
LINCOLN, NEBRASKA**

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Midwest Technical Service Center
Lincoln, Nebraska 68508

Classification and Correlation
of the Soils of
La Porte County, Indiana

The final correlation was prepared by Robert I. Turner at the Midwest Technical Service Center in Lincoln, Nebraska.

Major work was done during the period of March 20-24, 1978, although Indiana representatives did not attend during this period. Brief conferences were held with Franklin Furr, Party Leader, and Frank Sanders, Assistant State Soil Scientist for Indiana, during the period of January 1977, while they were at the Technical Service Center. Other conferences were held with Frank Sanders while he was at the MTSC in April and by telephone at various other times. The final correlation is based on the first draft of sections of the manuscript, the field correlation, final field review, correlation samples, some laboratory data, and interpretative information available with the standard series descriptions for the series used in this county. Robert I. Turner participated in the progress field review during the period of September 20-24, 1976. The halftone positive mylars to which the field mapping was transferred are considered the field sheets for this survey. A draft of the final correlation was reviewed by the SCS and the cooperating agencies in Indiana before it was approved and distributed.

Headnote for Detailed Soil Legend Symbols

The first capital letter is the initial one of the soil name. The lower case letter that follows separates mapping units having names that begin with the same letter, except that it does not separate sloping or eroded phases. The second capital letter indicates the class of slope. Symbols without a slope letter are used on mapping units which do not have slope as part of the name. A final number 2 indicates the soil is eroded.

SOIL CORRELATION OF
LAPORE COUNTY, INDIANA

| Field symbols | Field mapping unit name | Publi- cation symbol | Approved mapping unit name |
|------------------|-----------------------------------------------|----------------------------|-----------------------------------------------|
| Ad, Ke | Adrian muck | Ad | Adrian muck, drained |
| BaA, Hk, NaA | Elount silt loam, 0 to 3 percent slopes | BaA | Elount silt loam, 0 to 3 percent slopes |
| Br, AgA | Brady sandy loam | Br | Bourbon sandy loam |
| BtA | Brems sand, 0 to 3 percent slopes | BtA | Brems fine sand, 0 to 3 percent slopes |
| Cd, Wo | Cheektowaga fine sandy loam | Cd | Cheektowaga fine sandy loam |
| ChB, PlB | Chelsea fine sand, 2 to 6 percent slopes | ChB | Chelsea fine sand, 2 to 6 percent slopes |
| ChC, PlC | Chelsea fine sand, 6 to 12 percent slopes | ChC | Chelsea fine sand, 6 to 12 percent slopes |
| ChD, PlD | Chelsea fine sand, 12 to 18 percent slopes | ChD | Chelsea fine sand, 12 to 18 percent slopes |
| Ck, Gr | Cohoctah sandy loam | Ck | Cohoctah sandy loam |
| CoA, DoA | Coupee loam, 0 to 2 percent slopes | CoA | Coupee silt loam, 0 to 2 percent slopes |
| CoB, DoB | Coupee loam, 2 to 6 percent slopes | CoB | Coupee silt loam, 2 to 6 percent slopes |
| Du | Dune land | Du | Duneland |
| Ed | Edwards muck | Ed | Edwards muck, drained |
| EsA | Elston loam, 0 to 2 percent slopes | EsA | Elston loam, 0 to 2 percent slopes |
| EsB | Elston loam, 2 to 6 percent slopes | EsB | Elston loam, 2 to 6 percent slopes |
| Fh, Sh, Ee | Shoals variant sandy loam | Fh | Fluvaquents, loamy |

LAFORTE COUNTY, INDIANA --Continued

| Field symbols | Field mapping unit name | Publication symbol | Approved mapping unit name |
|------------------------|---------------------------------------------------|--------------------|---------------------------------------------------|
| Gf, Gm | Gilford fine sandy loam | Gf | Gilford fine sandy loam |
| Haa, BxA | Hanna sandy loam, 0 to 3 percent slopes | Haa | Hanna sandy loam, 0 to 3 percent slopes |
| Hh, H1A, Mh | Histosols and Aquolls | Hh | Histosols and Aquolls |
| Wt | Whitaker variant loam | Hk | Homer loam |
| Hm | Houghton muck | Hm | Houghton muck |
| Ho | Houghton muck, drained | Ho | Houghton muck, drained |
| Md | Martisco muck | Md | Martisco muck, drained |
| Mm | Maumee loamy fine sand | Mm | Maumee loamy fine sand |
| Mn | Maumee variant loamy sand | Mn | Maumee variant loamy sand |
| mp | Milford silty clay loam | mp | Milford silty clay loam |
| MrE2 | Morley silt loam, 2 to 6 percent slopes, eroded | MrB2 | Morley silt loam, 2 to 6 percent slopes, eroded |
| MrC2, MrC3 | Morley silt loam, 6 to 12 percent slopes, eroded | MrC2 | Morley silt loam, 6 to 12 percent slopes, eroded |
| MrE2, MrE2, MrD3, MrE3 | Morley silt loam, 12 to 18 percent slopes, eroded | MrD2 | Morley silt loam, 12 to 18 percent slopes, eroded |
| Va | Valparaiso loamy fine sand | Mx | Morocco loamy fine sand |
| Mz | Muskego muck | Mz | Muskego muck, drained |
| Nf | Newton loamy fine sand | Nf | Newton loamy fine sand |

LAFORTE COUNTY, INDIANA --Continued

| Field symbols | Field mapping unit name | Publication symbol | Approved mapping unit name |
|---------------|-----------------------------------------------|--------------------|--------------------------------------------------|
| OaC | Oakville fine sand, 4 to 12 percent slopes | OaC | Oakville fine sand, 4 to 12 percent slopes |
| OaE, OaF | Oakville fine sand, 12 to 25 percent slopes | OaE | Oakville fine sand, 12 to 25 percent slopes |
| Pa | Palms muck | Pa | Palms muck, sandy substratum |
| Pe | Pewamo silty clay loam | Pe | Pewamo silty clay loam |
| Ph, Ar | Pinhook loam | Ph | Pinhook loam |
| Qu | Quinn loam | Qu | Quinn loam |
| R1A | Riddles loam, 0 to 2 percent slopes | R1A | Riddles loam, 0 to 2 percent slopes |
| R1E2, RaB2 | Riddles loam, 2 to 6 percent slopes, eroded | R1E2 | Riddles loam, 2 to 6 percent slopes, eroded |
| R1C2, RaC2 | Riddles loam, 6 to 12 percent slopes, eroded | R1C2 | Riddles loam, 6 to 12 percent slopes, eroded |
| R1D2 | Riddles loam, 12 to 18 percent slopes, eroded | R1D2 | Riddles loam, 12 to 18 percent slopes, eroded |
| R1F, R1F2 | Riddles loam, 25 to 45 percent slopes | R1F | Riddles loam, 25 to 45 percent slopes |
| Sa | Saugatuck loamy fine sand | Sa | Saugatuck-Pipestone complex |
| Sb, Re, Rm | Sebewa loam | Sb | Sebewa loam, shaly sand substratum |
| Se | Selfridge loamy fine sand | SeA | Selfridge loamy fine sand, 0 to 2 percent slopes |

LAFORTE COUNTY, INDIANA --Continued

| Field symbols | Field mapping unit name | Publi- cation symbol | Approved mapping unit name |
|-------------------------------|---------------------------------------------------------|----------------------------|-----------------------------------------------------------|
| SeB, SeC | Seward loamy fine sand, 2 to 6 percent slopes | SeB | Selfridge loamy fine sand, 2 to 6 percent slopes |
| So | Sloan variant silty clay loam | So | Suman silty clay loam |
| TcA | Tracy sandy loam, 0 to 2 percent slopes | TcA | Tracy sandy loam, 0 to 2 percent slopes |
| TcB2 | Tracy sandy loam, 2 to 6 percent slopes, eroded | TcB | Tracy sandy loam, 2 to 6 percent slopes |
| TcC2 | Tracy sandy loam, 6 to 12 percent slopes, eroded | TcC2 | Tracy sandy loam, 6 to 12 percent slopes, eroded |
| TcD2 | Tracy sandy loam, 12 to 18 percent slopes, eroded | TcD2 | Tracy sandy loam, 12 to 18 percent slopes, eroded |
| TcF, TcF2 | Tracy sandy loam, 25 to 45 percent slopes | TcF | Tracy sandy loam, 25 to 45 percent slopes |
| Tr | Troxel loam | Tr | Troxel silt loam |
| TyA | Tyner loamy sand, 0 to 2 percent slopes | TyA | Tyner loamy sand, 0 to 2 percent slopes |
| Ua, G.P., C.F., SP, Ma, DP | Udorthents | Ua | Udorthents, loamy |
| Uc, UcA | Urban land-Coupee complex | Uc | Urban land-Coupee complex |
| Uo, Ub | Urban land-Oakville complex | UoC | Urban land-Oakville complex, 1 to 10 percent slopes |
| Uv | Urban land-Valparaiso complex | Uv | Urban land-Morocco complex |
| Wa | Wallkill silt loam | Wa | Wallkill silt loam |
| We | Warners loam | We | Warners silt loam |
| Wh | Washtenaw silt loam | Wh | Washtenaw silt loam |

La Porte County, Indiana

Series established by this correlation:

None

Series dropped or made inactive:

None

Join Statement:

Soil survey of La Porte County, Indiana, joins the modern published soil survey of St. Joseph County, Indiana, on the east; the recently completed soil survey of Porter County, Indiana, on the west; the nearly completed soil survey of Berrien County, Michigan, on the north; and the project soil survey of Starke County, Indiana, on the south.

A more detailed explanation of all discrepancies in the join of the detailed soil maps and the general soil map with the four adjoining counties is on file at the PSC office and at the Indiana State Office. The differences are reasonable, and the counties are satisfactorily joined to the La Porte County soil survey. The lines on the general soil maps join with the exception of St. Joseph County where there are some acceptable differences. Two small soil association areas in St. Joseph County were not recognized in La Porte County because of size and resulting clutter on the map. Some of the soil names in the associations are different because of different proportions of components in map units, recognition of new series previously not separated in previous surveys, differences in composition of soils within different survey areas and, in St. Joseph County, a slight change in the concept of a few soil series.

The lines on the detailed soil maps join and similar series join, although a few areas have different names. These differences are the result of knowledge learned through further study of the soils, recognition of new series not previously separated in soil surveys, slight changes in the definitions of a few soil series, and the inclusion of small amounts of some soils with similar soils in one survey area which were separated in other surveys because of larger extent.

It has been certified that soil mapping was completed in June 1978.

Soil survey interpretations have been coordinated, and those being used in this manuscript are in agreement with the latest information on the SCS-SOILS-5 forms.

Locations of the typical pedon descriptions are in soil areas using those reference names, and the legal descriptions are correct.

Verification of Exact Cooperator Names:

The state soil scientist has certified that the following statements for the front cover and the third paragraph of the box inside the front cover shall read as follows for this soil survey:

La Porte County, Indiana

A. Outside front cover:

United States Department of Agriculture
Soil Conservation Service
in cooperation with
Purdue University Agricultural Experiment Station

B. Inside front cover:

This survey was made cooperatively by the Soil Conservation Service, Purdue University Agricultural Experiment Station, and the Soil and Water Conservation Committee, Indiana Department of Natural Resources. It is part of the technical assistance furnished to the La Porte County Soil and Water Conservation District. Financial assistance was made available by the board of county commissioners of La Porte County.

Disposition of Field Sheets:

The original field sheets have been transferred to halftone positive mylars of the atlas sheets by a correlated legend. Blue-line copies of these mylars have been made for fire protection. Overlays have been completed for all of the atlas sheets except for adding stickons for the symbols. Map finishing will be completed after approval of the final correlation. Halftone positive mylars are considered as the field sheets of this survey.

Prior Soil Survey Publications:

There was a prior soil survey for La Porte County published in 1944 which should be listed as a reference citation and noted in the introduction of this soil survey. An example of the way this might be done follows: "The first soil survey of La Porte County was published in 1944 (reference citation). This survey updates the first survey and provides additional information and larger maps that show soils in greater detail."

Instructions for Map Compilation:

As previously noted, the original field sheets have already been compiled on halftone positive mylars and overlays have been prepared. Therefore, the attached SCS-SOILS-37A form furnished a record of the "conventional and special symbol legend" that is shown as the legend on the published soil survey.

The following ad hoc spot symbols will not be shown on the published soil survey:

| | |
|--------------------------------------------|--------|
| Clay loam spot (<3 acres in size) | Delete |
| Mucky loam spot (10 acres or less in size) | Delete |

LaPorte Co.

State

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Approved: February 12, 1979

Maurice Stout, Jr.
Head, Soils Staff
Midwest TSC

CONVERSION LEGEND RELATING FIELD
MAP SYMBOLS TO PUBLICATION SYMBOLS

| <u>Field Symbol</u> | <u>Publication Symbol</u> | <u>Field Symbol</u> | <u>Publication Symbol</u> |
|-------------------------|-------------------------------|-------------------------|-------------------------------|
| Ad | Ad | Ma | Ua |
| AgA | Br | Md | Md |
| Ar | Ph | Mh | Hh |
| BaA | BaA | Mm | Mm |
| Br | Br | Mn | Mn |
| BtA | BtA | Mq | Mp |
| BxA | HaA | MrB2 | MrB2 |
| Cd | Cd | MrC2 | MrC2 |
| C.F. | Ua | MrC3 | MrC2 |
| ChB | ChB | MrD2 | MrD2 |
| ChC | ChC | MrD3 | MrD2 |
| ChD | ChD | MrE2 | MrD2 |
| Ck | Ck | MrE3 | MrD2 |
| CoA | CoA | Mz | Mz |
| CoB | CoB | NaA | BaA |
| DoA | CoA | Nf | Nf |
| DoB | CoB | OaC | OaC |
| D.P. | Ua | OaE | OaE |
| Du | Du | OaF | OaE |
| Ed | Ed | Pa | Pa |
| Ee | Fh | Pe | Pe |
| EsA | EsA | Ph | Ph |
| EsB | EsB | PlB | ChB |
| Fh | Fh | PlC | ChC |
| Gf | Gf | PlD | ChD |
| Gm | Gf | Qu | Qu |
| G.P. | Ua | RaB2 | R1B2 |
| Gr | Ck | RaC2 | R1C2 |
| HaA | HaA | Re | Sb |
| Hh | Hh | R1A | R1A |
| Hk | BaA | R1B2 | R1B2 |
| H1A | Hh | R1C2 | R1C2 |
| Hm | Hm | R1D2 | R1D2 |
| Ho | Ho | R1F | R1F |
| Ke | Ad | R1F2 | R1F |

La Porte County, Indiana

| <u>Field Symbol</u> | <u>Publication Symbol</u> | <u>Field Symbol</u> | <u>Publication Symbol</u> |
|-------------------------|-------------------------------|-------------------------|-------------------------------|
| Rm | Sb | Tr | Tr |
| Rr | SeA | TyA | TyA |
| Sa | Sa | Ua | Ua |
| Sb | Sb | Ub | UoC |
| SeB | SeB | Uc | Uc |
| SeC | SeB | UcA | Uc |
| Sh | Fh | Uo | UoC |
| So | So | Uv | Uv |
| S.P. | Ua | Va | Mx |
| TcA | TcA | Wa | Wa |
| TcB2 | TcB | We | We |
| TcC2 | TcC2 | Wh | Wh |
| TcD2 | TcD2 | Wo | Cd |
| TcF | TcF | Wt | Hk |
| TcF2 | TcF | | |

CLASSIFICATION OF PEDONS SAMPLED FOR LABORATORY ANALYSIS

Purdue University Soil Characterization Laboratory

| <u>Sampled As</u> | <u>Sample Number</u> | <u>Correlated As</u> |
|-------------------|----------------------|----------------------|
| Ardmore | S72IN46-1-(1-8*) | Pinhook taxadjunct |
| Ardmore | S72IN46-2-(1-6*) | Pinhook |
| Rensselaer | S72IN46-3-(1-7*) | Sebewa inclusion |
| Rensselaer | S72IN46-4-(1-6*) | Gilford |
| Coupee | S73IN46-1-(1-6*) | Elston taxadjunct |
| Coupee | S73IN46-2-(1-7*) | Elston taxadjunct |
| Coupee | S74IN91-1-(1-7*) | Coupee taxadjunct |
| Chelsea | S74IN91-2-(1-3*) | Chelsea inclusion |
| Nappanee | S74IN91-3-(1-7*) | Blount |
| Nappanee | S74IN91-4-(1-5*) | Blount |
| Nappanee | S74IN91-5-(1-6*) | Blount |
| Seward | S74IN91-6-(1-6*) | Selfridge inclusion |
| Saugatuck | S76IN91-6-(1-7*) | Saugatuck |
| Coupee | S76IN91-10-(1-6*) | Coupee taxadjunct |
| Pipestone | S76IN91-12-(1-5*) | Pipestone |

National Soil Survey Laboratory, Beltsville, Maryland

| | | |
|--------|-------------------|-------------------|
| Tracy | S70IND46-1-(1-9*) | Tracy taxadjunct |
| Lydick | S70IND46-2-(1-8*) | Elston taxadjunct |
| Door | S70IND46-3-(1-7*) | Elston inclusion |
| Quinn | S70IND46-4-(1-9*) | Pinhook |

National Soil Survey Laboratory, Lincoln, Nebraska

| | | |
|---------|------------------|-------------------------------|
| Hanna | 77P0713-77P0720 | Hanna inclusion ^{1/} |
| Muskego | S75IN91-1-(1-9*) | Muskego |

^{1/} The mineralogy at this site is siliceous marginal to mixed and the presence of an argillic horizon, as well as depth to its upper boundary, is difficult to determine. Consequently, a clear determination of Aquultic or Aquollic properties is difficult. Further study is needed to properly characterize the series concept and select a suitable pedon for the type location of the standard series description.

Indiana State Highway Soil Testing Laboratory

| | | |
|----------|------------------|-------------------|
| Coupee | S73IN46-1-(1-6*) | Elston taxadjunct |
| Coupee | S74IN91-1-(1-7*) | Coupee taxadjunct |
| Nappanee | S74IN91-4-(1-5*) | Blount |
| Nappanee | S74IN91-5-(1-6*) | Blount |

Notes to Accompany
Classifications and Correlations
of the Soils of
LaPorte County, Indiana

by
Robert I. Turner

ADRIAN SERIES

Adrian soils are more acid than the defined range of the Adrian series.

BLOUNT SERIES

Blount soils are in the least acid, least clayey parts of the range for the Blount series. In addition, they tend to be less gray in the subsoil than typical for the Blount series.

BREMS SERIES

The Brems soils are in the most acid part of the range of the series, and they are in the wettest part of the range for the series with gray mottles within depths of less than 30 inches below the surface.

CHEEKTOWAGA SERIES

This soil tends to be more alkaline in the lower portion of the sandy material and to have yellower hues throughout the series control section than allowed in the series definition.

COHOCTAH SERIES

Cohoctah soils are taxadjuncts to the Cohoctah series as the surface soil is more acid and they contain sand and loamy sand textures within depths of less than 30 inches and are dominated by brown colors in the C horizons which are outside the range of the series.

COUPEE SERIES

Some pedons included in mapping units of Coupee have a transitional layer that is too thick to meet the minimum definition that would allow us to place them in the contrasting textural family.

EDWARDS SERIES

Edwards soils are taxadjuncts to the Edwards series as the organic material is much more acid than the defined range for the Edwards series and the material identified as marl has a lower color value than defined in "Soil Taxonomy."

ELSTON SERIES

These soils are taxadjuncts to the Elston series as they have within depths of 26 inches B22t horizons of loamy sand, lack the B/A clay ratio necessary to define an argillic horizon, and probably are marginal to failing the base saturation requirements of Mollisols.

GILFORD SERIES

These soils are in the thickest part of the range in depth of sandy loam material allowed in a Gilford series and, from that standpoint, are marginal to the Lyles series as it is presently being defined. By definition, Gilford must have less than 40 inches of sandy loam or finer material while the Lyles must have greater than 40 inches of sandy loam or finer material.

HANNA SERIES

The type location for this soil at present is in this county. The soil needs further study as laboratory data recently obtained from this county places the soil in a siliceous family and indicates the argillic horizon is problematical. Indiana will give further study to characterizing this series during the next field season. A different type location will be selected if the present classification is continued.

HOMER SERIES

These soils are previously named a variant of the Whitaker series, but they seem to resemble the Homer series more in the interpretations that might be made for use and management. These soils are taxadjuncts to the Homer series because the transitional sandy loam horizon is too thick to meet the definition of contrasting textures. The most acid horizons in the solum are neutral, and they are moderately alkaline and contain free carbonates at depths of less than 30 inches.

HOUGHTON SERIES

These soils are more acid than typical for the Houghton series.

MAUMEE VARIANT SERIES

Some consideration was given to using the Tobico series for this unit but was discarded due to the browner colors in the C horizon of this soil and the domination by snail shell fragments in the lower part of the control section. The acreage is small, and the need for a new series is not evident.

MILFORD SERIES

Milford soils are in the least clayey part of the range in texture for the Milford series and are in the shallowest part of the range in solum thickness for the Milford series. Evidence of stratification was not noted in the solum, but the C horizon which in this soil starts at depths of 40 inches is stratified.

MORLEY SERIES

Morley soils are in the least clayey and least acid part of the range for the Morley series. In addition, they are shallower to gray mottles than are typical for the Morley series and would appear marginal to the Greenwood series.

MOROCCO SERIES

The Morocco soils in La Porte County have surface horizons which are in the darker end of the range allowed in the Morocco series.

MUSKEGO SERIES

Muskego soils contain minimal thicknesses of organic material allowed in the range for the series. In addition, the surface tier contains more hemic material than defined for the Muskego series; and the coprogenous earth material is less acid and contains free carbonates within depths of less than 30 inches, which is not typical for the Muskego series.

NEWTON SERIES

Newton soils lack mottles within the lower part of the mollic epipedon or higher chroma mottles which indicate movement and segregation of iron in the horizons immediately below the mollic epipedon and, for these reasons, are taxadjuncts to the series. The morphology of the representative pedon as described fails the definition of Aquolls as noted in "Soil Taxonomy."

PALMS SERIES

These soils are slightly more acid than the defined range of the Palms series. In addition, they are underlaid at depths of less than 60 inches by sand textures, and we have named them as a sandy substratum phase of Palms.

PEWAMO SERIES

These soils appear to be in the least clayey part of the range for the Pewamo series, and it is questionable if they actually contain the clay increase necessary for an argillic horizon. In addition, these soils are shallower to moderately alkaline reaction and strong effervescence, which indicates the presence of free carbonates at shallower depths than defined for the series.

QUINN SERIES

Quinn soils have thinner B2t horizons and are shallower to loamy sand textures than typical for the Quinn series.

RIDDLES SERIES

With the expansion in the range of properties of the Riddles series, the differentia between it and the Hickory and Lindley series is not correct as stated in the various series descriptions. In Lindley soils the clay fraction is dominated by montmorillonite, while in the Riddles series the clay fraction is more mixed or contains a higher content of illite. Hickory soils tend to be more acid and tend to have firmer consistence in the lower part of the solum and the C horizon. Riddles soils in this survey area contain reddish mottles throughout most of the B2 horizon, which is not typical for the Riddles series; however, we did not call it a taxadjunct on this count, but perhaps we should.

SAUGATUCK SERIES

Saugatuck soils are taxadjuncts to the Saugatuck series as they lack mottles in the A2 and in the ortstein horizons and thus fail the definitions of Aquods.

SEBEWA SERIES

A new series, Sedley, had been proposed; but after evaluating the factors, it was decided the situation could be adequately handled as a shaly sand substratum phase of Sebewa. In La Porte County, this soil has relatively soft gravel-size shale fragments in the underlying material and, consequently, the material is not a good source for gravel.

SELFRIDGE SERIES

Field map units Rr and SeB, previously named Rimer and Seward, respectively, were judged so close in terms of morphology, use, and interpretations that two series were not needed. In addition, the lower material in these two map units contain less than 35 percent clay and thus, was not within the range of the soils defined as Seward or Rimer. For that reason, it was decided to combine them all and rename them as Selfridge.

TROXEL SERIES

These soils are taxadjuncts to the Troxel series because they have more sand in the argillic horizon and contain loamy sand and sand textures at depths shallower than 60 inches. In these soils, because the argillic horizon is so deep, the upper 3 feet of material which is silt loam and dark colored is the most important from the aspect of the use and management of these soils. For that reason, we have gone along with the taxadjunct to the Troxel series.

TYNER SERIES

These soils in this county are in the least acid part of the range of the Tyner series. The Oakville series is a similar soil which contains less silt plus clay and is less acid than the Tyner series. The Tyner standard series description needs to be updated to correctly differentiate it from the Oakville series.

WALLKILL SERIES

These soils are taxadjuncts to the Wallkill series as they are fine-silty rather than fine-loamy, as defined for the Wallkill series. There does not seem to be any other similar series to place this soil with, so we have continued to consider it as a taxadjunct to the Wallkill series.

WARNERS SERIES

A small acreage of Warners has a thinner mollic epipedon than the range defined for the series and it also is slightly lighter colored.

WASHTENAW SERIES

This series is being updated and will be classified in the future as a Aeric Fluvaquents.

CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates a taxadjunct to the series. See notes for a description of those characteristics of this taxadjunct that are outside the range of the series]

| Soil name | Family or higher taxonomic class |
|-----------------|----------------------------------------------------------------------------|
| Adrian----- | Sandy or sandy-skeletal, mixed, euic, mesic Terric Medisaprists |
| Aguolls. | Loamy, mixed, mesic Haplaquolls |
| Blount----- | Fine, illitic, mesic Aeric Ochraqualfs |
| Brady-Bourbon-- | Coarse-loamy, mixed, mesic Aqu ^u ollic Hapludalfs |
| Brems----- | Mixed, mesic Aquic Udipsamments |
| Cheektowaga | Sandy over clayey, mixed, mesic Typic Haplaquolls |
| Chelsea----- | Mixed, mesic Alfic Udipsamments |
| *Cohoctah---- | Coarse-loamy, mixed, mesic Fluvaquentic Haplaquolls |
| Coupee----- | Fine-loamy over sandy or sandy-skeletal, mixed, mesic Ultic Hapludalfs |
| *Edwards----- | Marly, euic, mesic Limnic Medisaprists |
| *Elston----- | Coarse-loamy, mixed, mesic Typic Argiudolls Fluvaquents |
| Gilford----- | Loamy, mixed, nonacid, mesic Fluvaquents |
| Hanra----- | Coarse-loamy, mixed, mesic Typic Haplaquolls |
| Histosols. | Coarse-loamy, mixed, mesic Aquultic Hapludalfs |
| *Homer----- | Euic, mesic Medisaprists |
| Houghton---- | Fine-loamy over sandy or sandy-skeletal, mixed, mesic Aeric Ochraqualfs |
| Martisco---- | Euic, mesic Typic Medisaprists |
| Maumee----- | Fine-silty, carbonatic, mesic Histic Humaquepts |
| Maumee Variant | Sandy, mixed, mesic Typic Haplaquolls |
| Milford----- | Mixed, mesic Mollic Psammaquents |
| Morley----- | Fine, mixed, mesic Typic Haplaquolls |
| Morocco----- | Fine, illitic, mesic Typic Hapludalfs |
| Muskego----- | Mixed, mesic Aquic Udipsamments |
| *Newton----- | Coprogenous, euic, mesic Limnic Medisaprists |
| Oakville----- | Sandy, mixed, mesic Typic Humaquepts |
| Palms----- | Mixed, mesic Typic Udipsamments |
| | Loamy, mixed, euic, mesic Terric Medisaprists |

CLASSIFICATION OF THE SOILS--Continued

| Soil name | Family or higher taxonomic class |
|----------------|-----------------------------------------------------------------------------------|
| Pewamo----- | Fine, mixed, mesic Typic Argiaquolls |
| Pinhook----- | Coarse-loamy, mixed, mesic Mollic Ochraqualfs |
| Pipestone---- | Sandy, mixed, mesic Entic Haplaquods |
| Quinn----- | Coarse-loamy, mixed, mesic Typic Ochraqualfs |
| Eiddles----- | Fine-loamy, mixed, mesic Typic Hapludalfs |
| *Saugatuck---- | Sandy, mixed, mesic, ortstein Aeris Haplaquods |
| Sebewa----- | Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiaquolls |
| Selfridge---- | Loamy, mixed, mesic Aquic Arenic Hapludalfs |
| Suman----- | Fine-loamy over sandy or sandy-skeletal, mixed, mesic Fluvaquentic Haplaquolls |
| Tracy----- | Coarse-loamy, mixed, mesic Ultic Hapludalfs |
| *Troxel----- | Fine-silty, mixed, mesic Typic Argiudolls |
| Tyner----- | Mixed, mesic Typic Udipsamments |
| Udorthents. | Loamy, mixed, nonacid, mesic Udorthents |
| *Wallkill---- | Fine-loamy, mixed, nonacid, mesic Thapto-Histic Fluvaquents |
| Warners----- | Fine-silty, carbonatic, mesic Fluvaquentic Haplaquolls |
| Washtenaw---- | Fine-loamy, mixed, nonacid, mesic Aeris Fluvaquents |